System z Enables Solutions For A Smarter Planet

Smart Work On System z

Service Oriented Finance Automated Its Loan Processing In 2008

Service Oriented Finance CEO, 2008

Changing Business Conditions

Service Oriented Finance CEO, 2009

Change The Rules, Not The Process

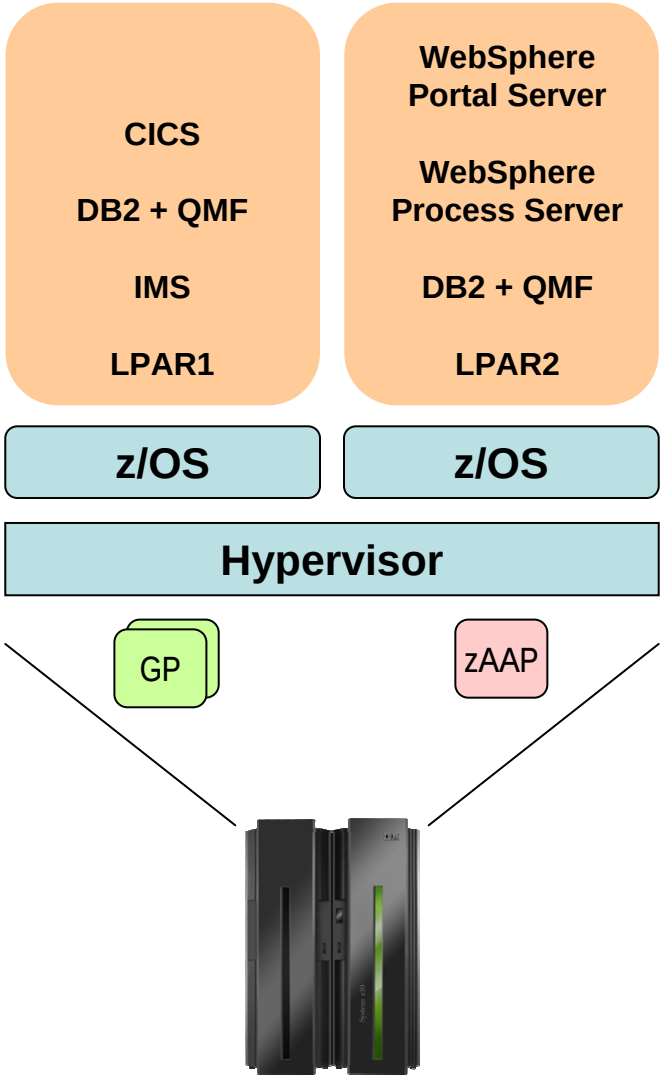
It sounds like we need a new business process!

Service Oriented Finance CIO

You don't have to replace the process – simply adjust it!

IBM

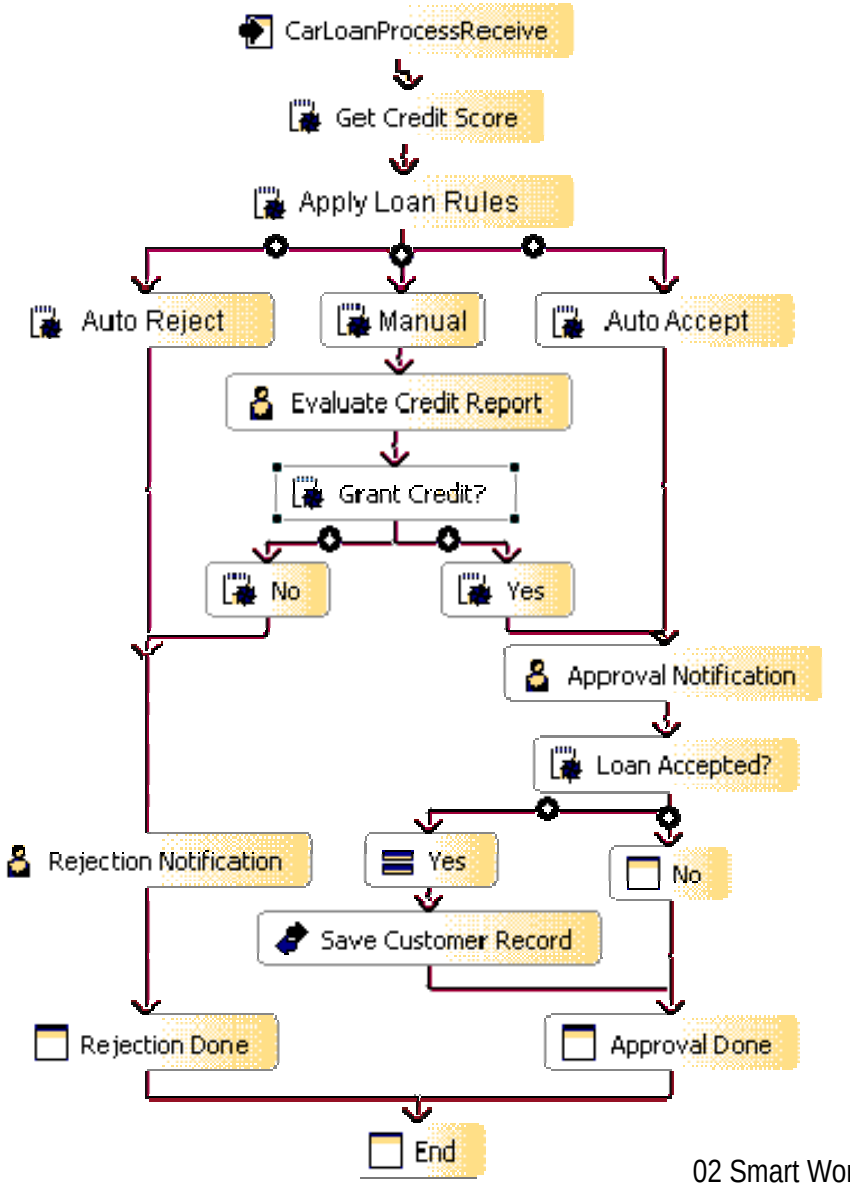
Service Oriented Finance Automated Their Loan Process With WebSphere On System z



System z:

- Lowest cost
- Performance from co-location
- Quality of service

The Current Loan Process



Key Features:

- Automated process management reduces processing time and eliminates paper
  - Efficient inclusion of human tasks, such as manual approval
  - Automatic access to back end systems
  - Instant status and tracking of each loan application
- System z is the lowest cost deployment platform

DEMO: The Current Loan Process

Tracy applies for a car loan from Service Oriented Finance

Car Loan Application

Loan Type:	(•) New Car ( ) Used Car
Loan Term:	( ) 24 (•) 36 ( ) 48 ( ) 60 ( ) 72
Loan Amount Requested:	45000
Application Type:	(•) Individual Application
	( ) Joint Application
Customer #:	
First Name:	Tracy
Last Name:	Conway
Address:	110 Peachtree Drive
City:	Chicago
State:	IL
Zip:	10987
Phone:	212-456-9092
Email:	tracy@zcpo.com

Submit Application

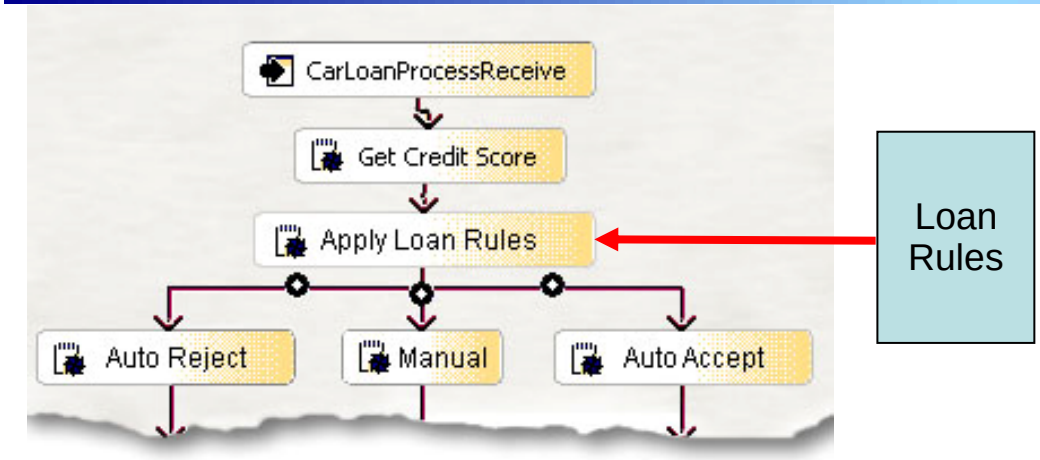
What Changes Do You Need To Make?

We need to impose a maximum loan limit and require better credit ratings from applicants.

Service Oriented Finance CEO

Service Oriented Finance CIO

Business Rules Let You Adapt Quickly To Business Change



WebSphere Process Server externalizes business rules so they can be adjusted by business managers in production, without requiring development changes to the process

- Business rules are typically used to adjust thresholds
- Business rules easily changed with a browser after the process is deployed
- New rules take effect immediately without having to redeploy

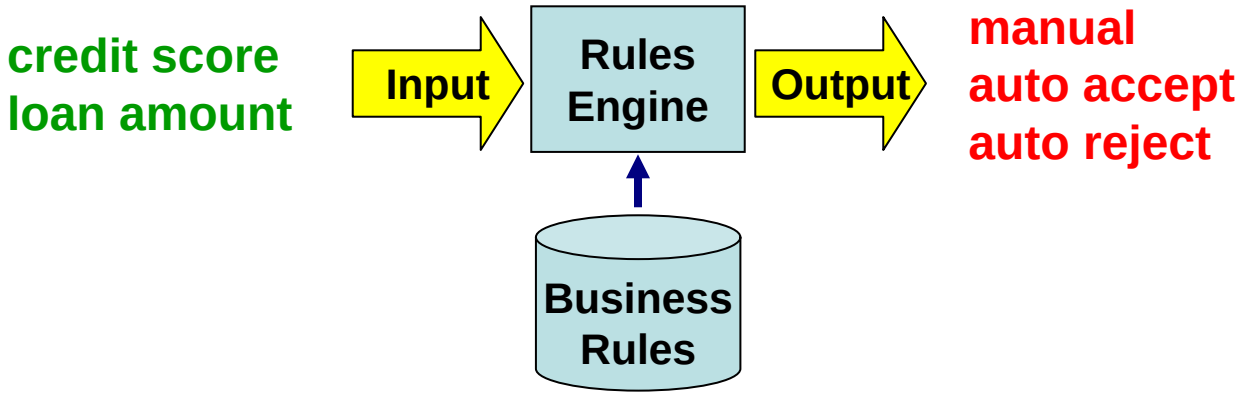
Example: Change The Business Rules

Current car loan rules

- Default analysis result is manual
- If credit score is less than 500 analysis result is set to auto reject
- If credit score is greater than 700 analysis result is set to auto accept

New car loan rules

- Default analysis result is manual
- If loan amount is greater than 30,000 analysis result is set to auto reject
- If credit score is less than 650 analysis result is set to auto reject
- If credit score is greater than 720 analysis result is set to auto accept



DEMO: Change The Rules

Welcome FENG | Logout | Help

> AnalyzeCreditScoreRuleGroup > executeRule

Edit Mode:AnalyzeCreditScoreRuleSet - Ruleset

Save | Cancel | Messages:

General Information

Last Published	Feb 24, 2009 07:45 (Local Time)	**Status**	*Original
Description			

Rules

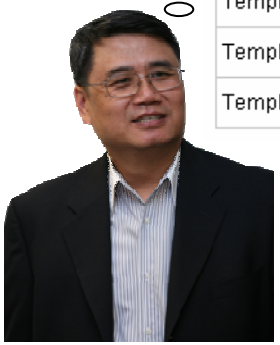
Close Template List

Name	Rule	Action
ManualRule1	Set default analysis result to Manual	Delete
AutoReject	core is less than 500 then analysis result is Auto Reject	Delete
	s greater than 700 , then analysis result is Auto Accept	Delete

1. impose a maximum loan limit
2. require better credit ratings

d click "Add" button.

Tem		Rule	Action
e_AutoRejectRule		If credit score is less than then analysis result is Auto Reject	Add
Template_AutoAcceptRule		If credit score is greater than , then analysis result is Auto Accept	Add
Template_MaxLoanRule	MaxLoanRule	If loan amount is greater than 30000 , set analysis result to Auto Reject	Add
Template_ManualRule1		Set default analysis result to Manual	Add



SOF's Loan Analyst, JC Feng, needs to change the rules

There Were Some Other Changes Made To The Process

DEMO: The Loan Application With The New Rules

Tracy applies for a car loan from Service Oriented Finance, after the change of rules

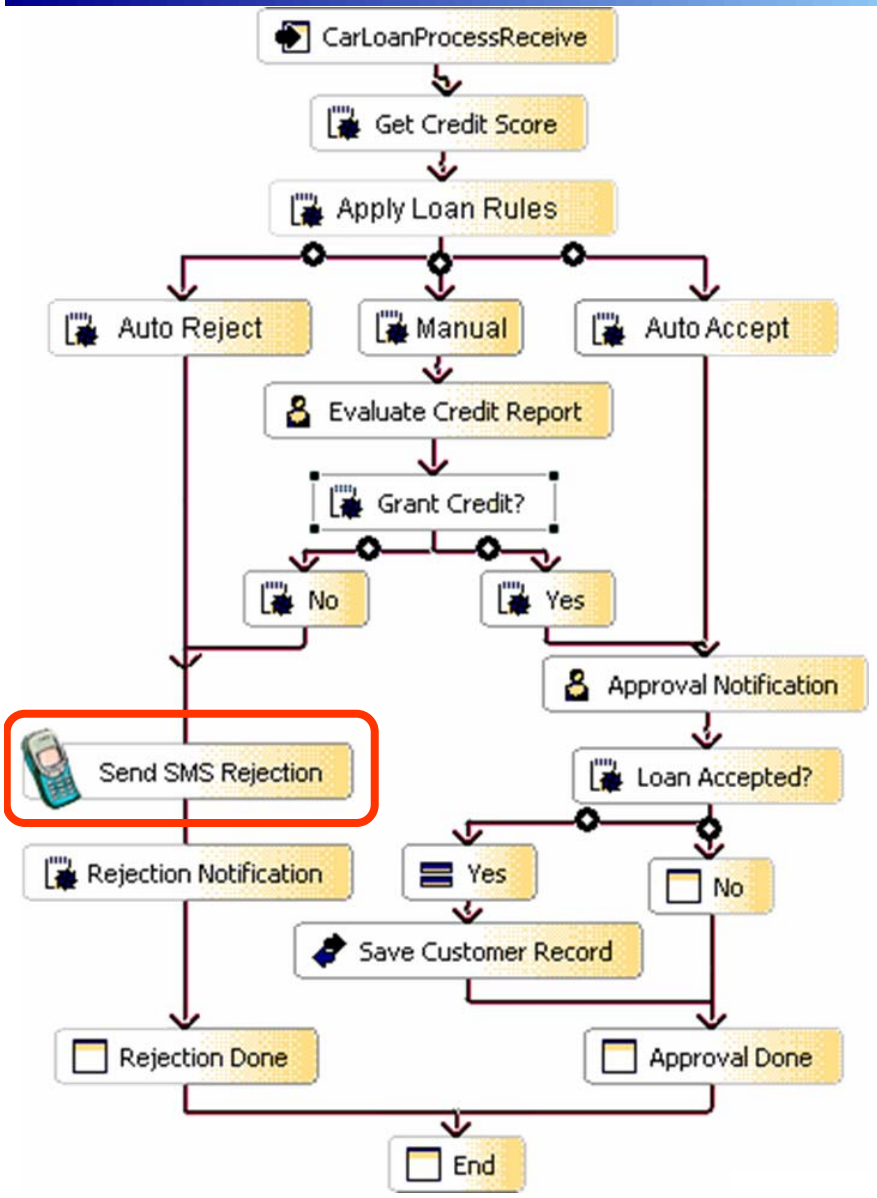
Car Loan Application

Loan Type:	(•) New Car ( ) Used Car
Loan Term:	( ) 24 (•) 36 ( ) 48 ( ) 60
Loan Amount Requested:	45000
Application Type:	(•) Individual Application
	( ) Joint Application
Customer #:	
First Name:	Tracy
Last Name:	Conway
Address:	110 Peachtree Drive
City:	Chicago
State:	IL
Zip:	10987
Phone:	212-456-9092
Email:	tracy@zcpo.com

Submit Application

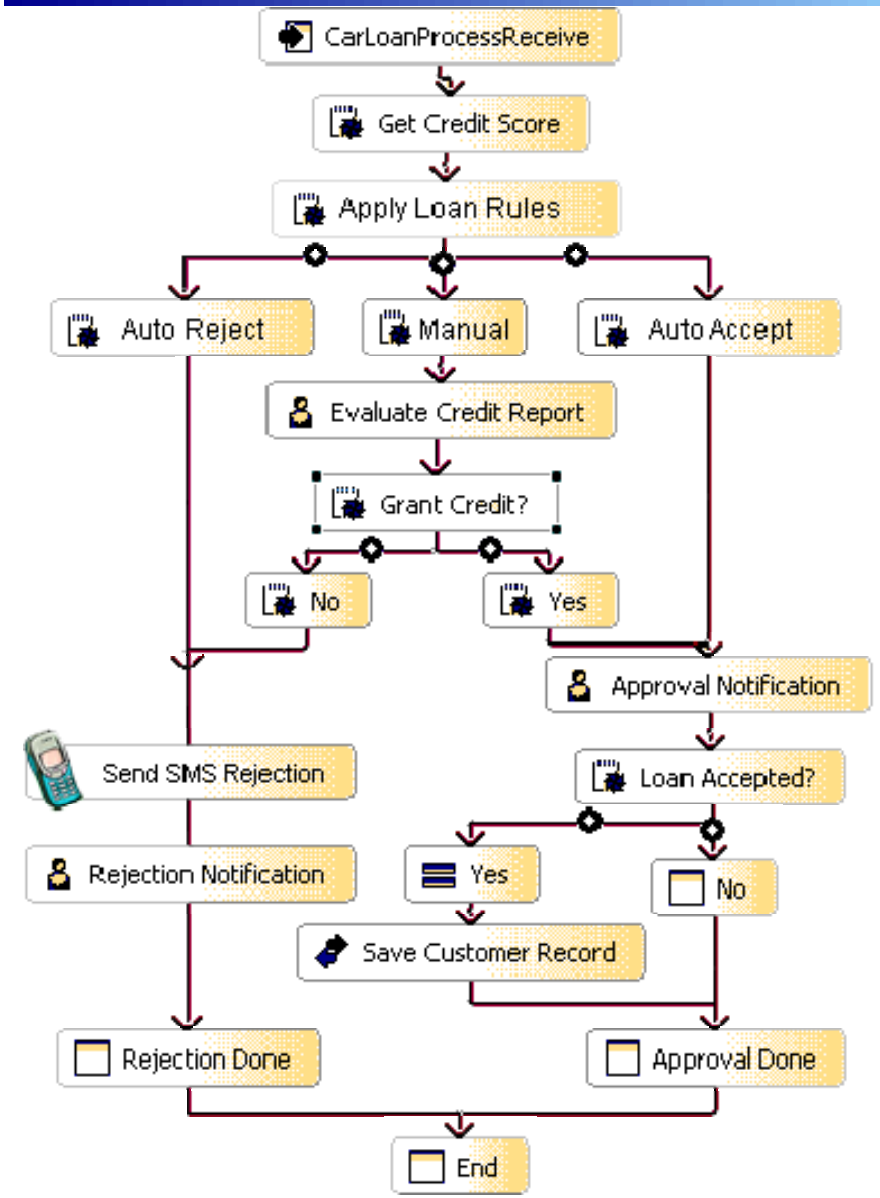
With New Rules!

Making More Revisions To The Business Process



- In the demo we added a notification sent to a mobile phone via SMS using the phone number provided
- It's fast and easy to revise and redeploy an existing business process
  - Change the order of activity steps
  - Add one or more new activities
  - Use a different service provider
- Service Component Architecture (SCA) makes it easy
  - Tool can easily insert "send SMS alert" activity into flow

Making More Revisions To The Business Process



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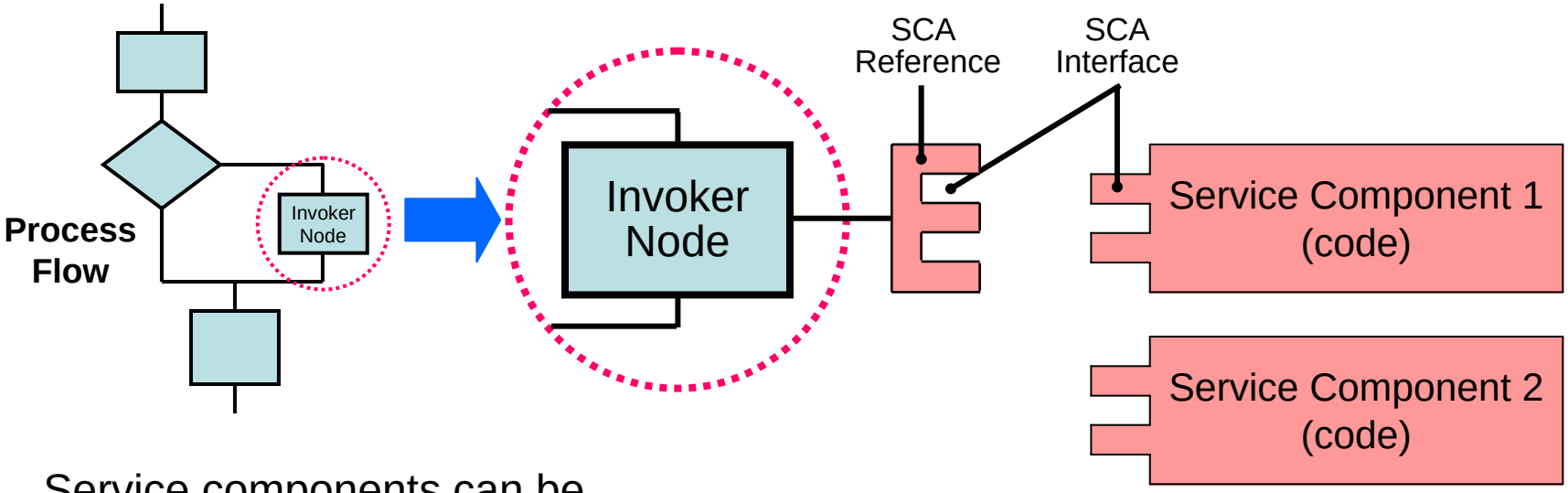
Service Component Architecture (SCA) Is The Foundation For Process Flexibility



Service components can be

- Wired-in to the reference at assembly time
- Changed at assembly time
- And, as we'll see, selected or substituted at runtime

Types of service components

- EJB code
- Proxies to call Web services
  (e.g. a CICS transaction wrapped as a Web service)
- Proxies to send a task to a human
- Proxies that make decisions about what to do at run time

Service Oriented Finance Needs Even More Flexibility

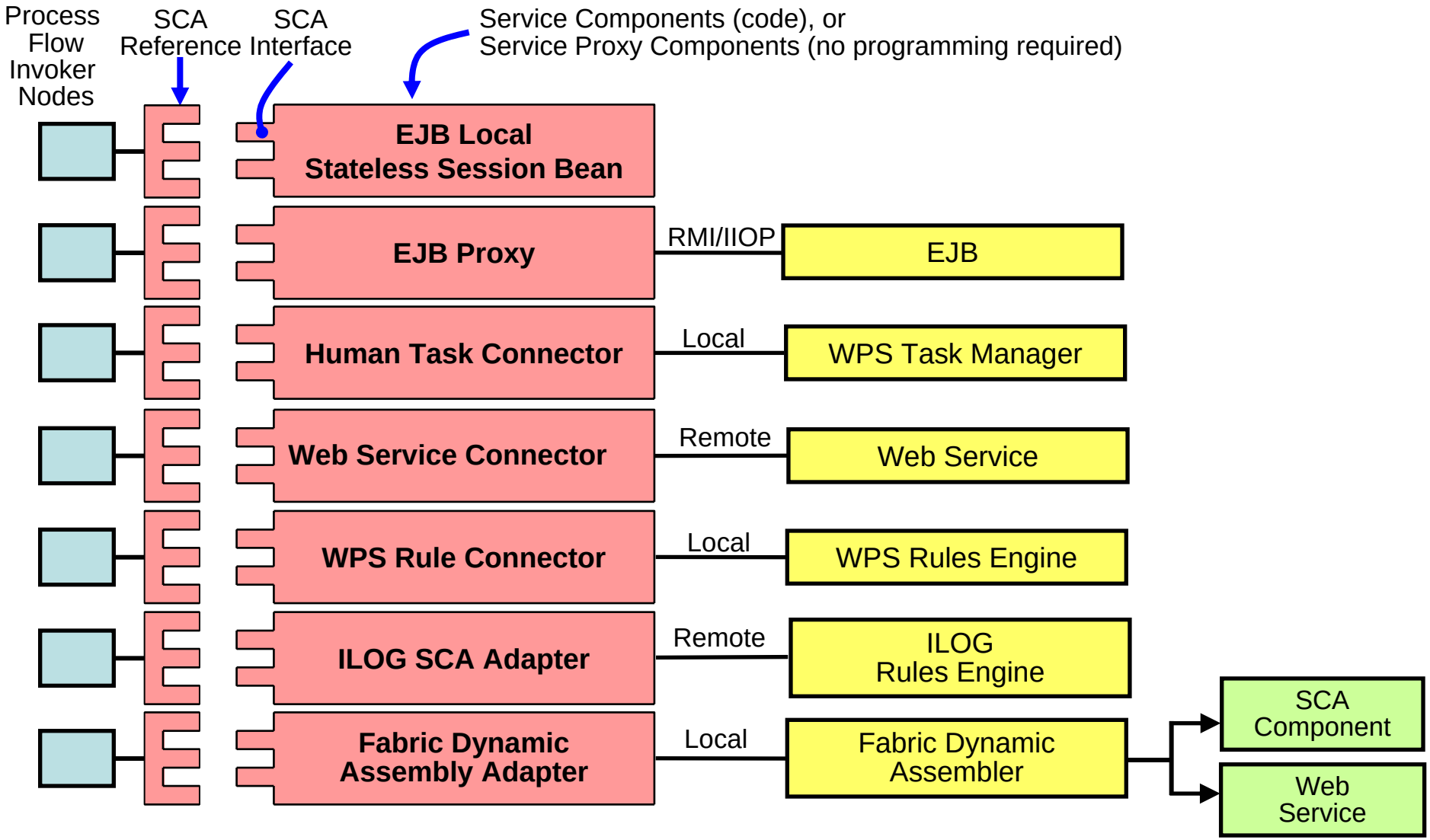
There are other scenarios where we need process flexibility.

Service Oriented Finance CEO

IBM has the most comprehensive set of flexible process capabilities.

IBM

Process Flex Points Are Built On Service Component Architecture



SOF Is Now An Agile Business, But There Are New Requirements

IBM can satisfy them!

Local Variations

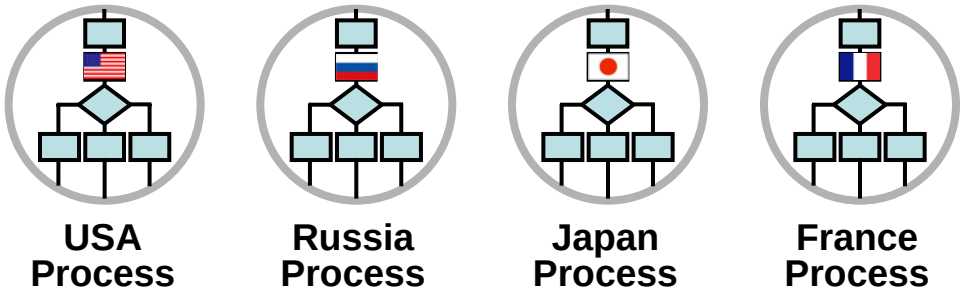
We want to deploy a common process but we need to handle variations in local environments.

SOF Loan Analyst

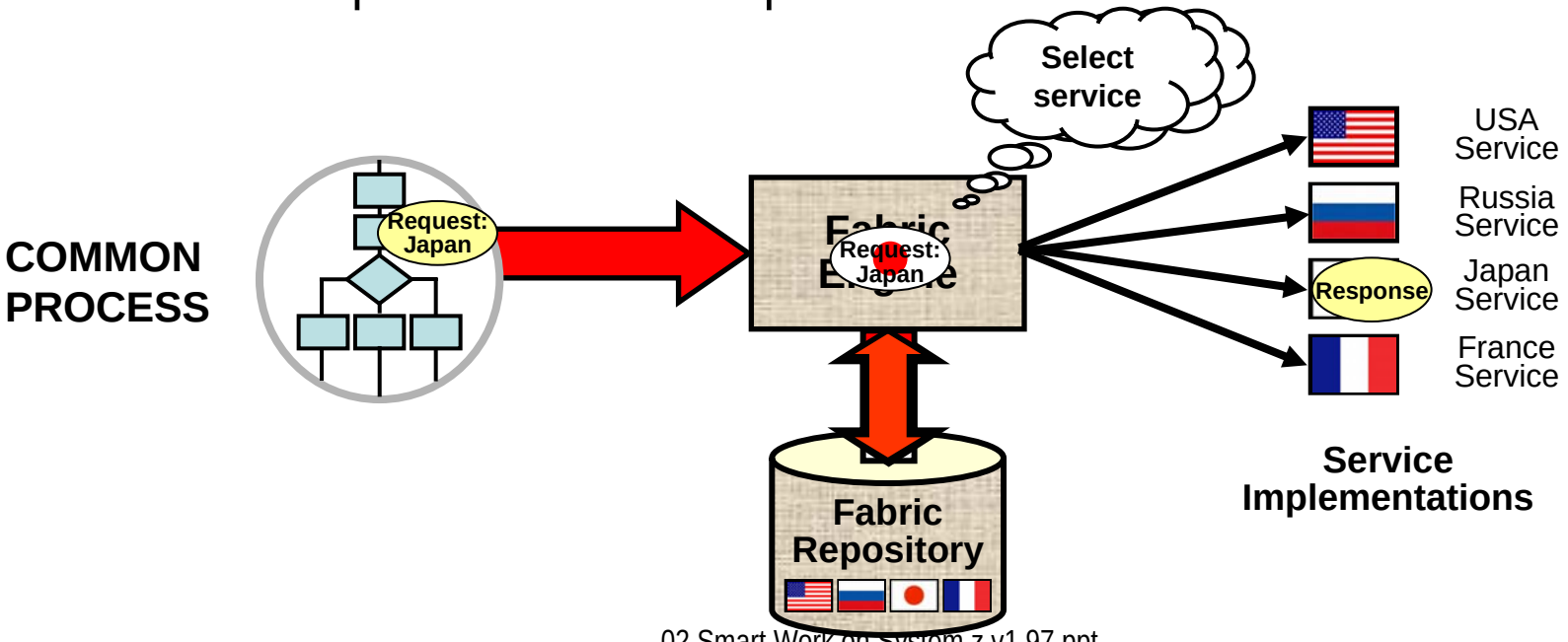
WebSphere Business Services Fabric is unique in its ability to do this!

IBM

WebSphere Business Fabric Permits A Common Process To Be Adapted To Localities



- **PROBLEM:** Need to deploy same process worldwide, with localized differences
  - Customizing separate copies is cumbersome and costly, and complicates version control
- **SOLUTION:** Fabric supports a **common process** by selecting, **at runtime**, the service required for each request



There are many experts that determine our business policies.
We need to capture this expertise and use it to make process decisions.

Business User

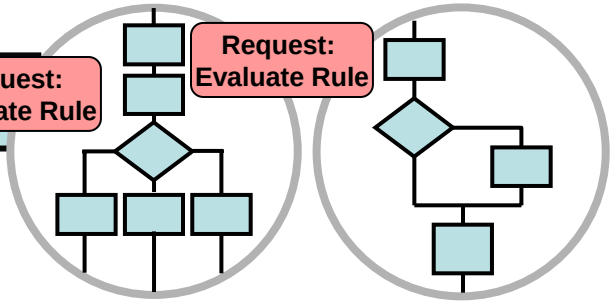
ILOG is a great way to capture expertise in complex rule sets.

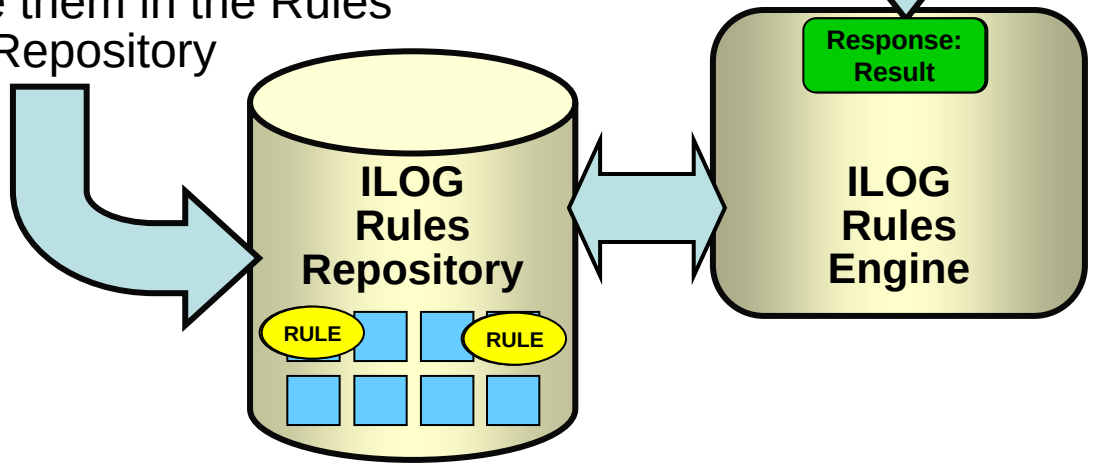
IBM

ILOG Captures Expertise As Business Rules For Re-Use In Business Processes

Experts create business rules and save them in the Rules Repository

Business Processes invoke business rules





ILOG Rules Engine evaluates a specified rule from the Repository and returns result to the Business Process

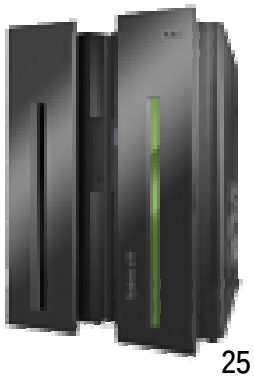
ILOG Repository captures business rules for re-use in Business Processes

Why Deploy This Process On System z?

- A Smart SOA implementation requires high quality of service from the deployment platform
  - IBM Smart SOA Middleware Runs On System z
  - Workload Management that handles peaks and unpredictable demands of mixed workloads to achieve SLAs
  - Scalability and Clustering
  - Continuous Availability/Disaster Recovery
  - Rock-solid Security
- Running workloads on the same logical partition provides benefits for performance, security and management
- Lowest Total Cost of Ownership

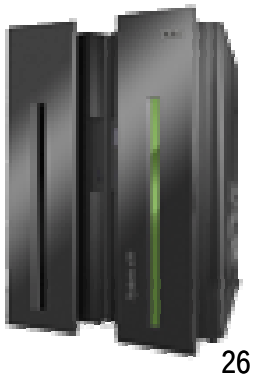
IBM Smart SOA Middleware Runs On System z

- **WebSphere Application Server NEW! v7 for z/OS -** deploy applications and services on a robust, secure, and performant platform
- **WebSphere Enterprise Service Bus** – built on WAS, WESB adds message routing and transformation for services
- **WebSphere Process Server** – built on WESB, WPS adds standards-based business process management and runtime support
- **WebSphere Service Registry and Repository** – a directory of available services suitable for development and assembly; supports WESB routing and transformation
- **WebSphere Business Events** – detect critical patterns of business events that lead to taking action proactively, through notification, or running a service or business process
- **WebSphere Business Services Fabric** – allows a business process to determine the best service at runtime by examining the business context. Especially helpful for allowing a common business process to be used with channel- or locale-specific variations.
- **WebSphere Business Modeler Publishing Server** - Allows users to validate BPM assets with subject matter experts to create best practice process models and optimize processes
- **WebSphere Business Monitor** – adds portal support to view trends or status of currently-running business processes, and take action on individual processes as required
- **ILOG jRules** – adds business rule management to capture the knowledge of experts, and enhance reuse of business rules



WAS for z/OS Provides The Benefits of z/OS and Sysplex Transparently To Its Applications

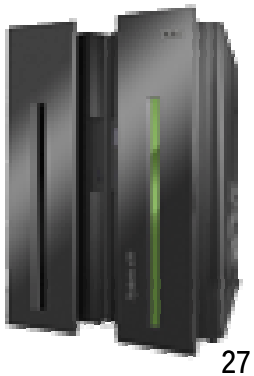
- Optimal access to existing assets through Workload Manager
- No single points of failure, integrated with z/OS recovery mechanisms
- Replicated Server cluster architecture leveraging shared data for scale and availability
- Integrated with local SAF security, application isolation for additional integrity
- Integrated with z/OS automation capabilities for superior manageability
- Comprehensive and recoverable transaction management leveraging RRS and System Logger
- SMF-based comprehensive reporting for capacity chargeback and diagnosis



Co-location Performance Advantages

Simplifying multiple physical tiers to a single tier provides tighter security, enhanced management, reduced costs, simplified configurations and performance gains

- Example: WAS and DB2 in same LPAR, compared to different LPARs
  - 52% more throughput when WebSphere Application Server is located in the same LPAR with DB2
  - Up to 34% overall CPU savings with WebSphere Application Server and DB2 on the same LPAR
- NEW in WAS z/OS v7: WOLA provides cross-memory access to improve communications speed with backend apps (CICS and batch) in the same LPAR



Co-location Provides More Performance, Security and Management Benefits

Performance Benefits:

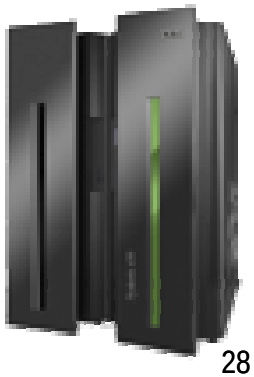
- JDBC Local (Type 2) connectors allow use of native API calls
- Costly network communications are replaced with high-performance direct-memory access
- High speed access to shared cache without external network communication
- Improved two-phase commit performance
- Reduced CPU utilization

Security Benefits:

- No network between tiers means
  - Reduced opportunity for intercepting transmissions
  - No need to encrypt data or tunnel between tiers

Management Benefits:

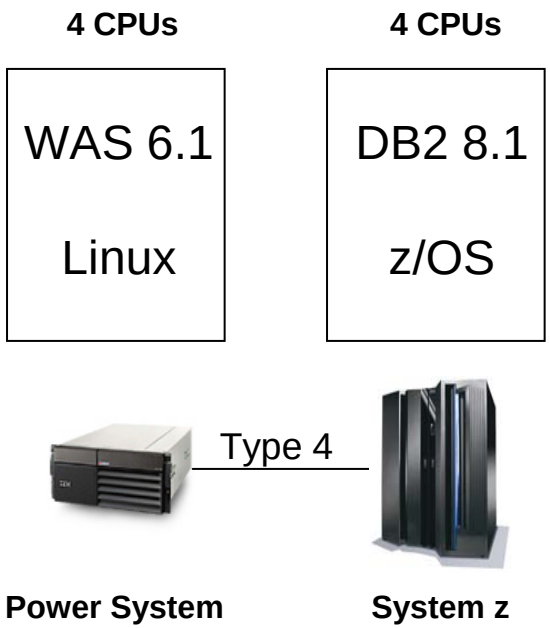
- Operations automation
- Problem determination & error recovery
- Deployment & version control
- Logging, auditing



On-line Banking Benchmark Demonstrates Performance Advantages Of Co-location

Separate Machines

150 tps



Same LPAR

243 tps

z Series Server : z9-EC, 8 X 1.7 GHz, 64 GB RAM

Deploy WebSphere Process Management Application On Mainframe vs. HP Servers

Existing Mainframe

Existing z10:
2 GP 1,720 MIPS
DB2 and utilities
With 20TB storage

Existing Disaster Recovery Site

Existing:
1 GP processor for hot disaster switch-over
1 "dark" DR processor
With 20TB storage

Add 1 LPAR for New Web Application w 1.28TB storage

Prod

1,624 MIPS additional workload

Incremental:
1 zAAP 920 MIPS WPS & Portal (85%)
1 GP 541 MIPS DB2
80 MIPS WPS & 83 MIPS Portal (15%)
2 GB memory

And Add Disaster Recovery w 1.28TB storage

Prod

Capacity Backup:
1 GP
1 zAAP

3 year cost of acquisition $3.27M

Or Add HP Integrity Superdome 9140n Server w 1.67TB storage

Prod

93,236 Performance Units*

Dev, QA, Disaster Recovery w 1.67TB storage

Prod

93,236 Performance Units*

3 year cost of acquisition $7.02M

**Production Performance Units required = 541 x 87 + 1083 x 42 = 92,553*

WebSphere Process Management Incremental Cost Breakdown

Mainframe Incremental Hardware

OTC		ANNUAL	
GP	$1,358,000	Processor Maintenance * (For year 2, 3)	$90,142
zAAP	$125,000		
DR Processors	$27,000		
Memory (2 GB)	$4,500	Storage Maintenance (For year 2, 3)	$5,272
IBM Storage (1.28TBx2)	$141,750		
TOTAL	$1,656,250	TOTAL	$95,414 (year 2, 3)

Mainframe Incremental Software

OTC		ANNUAL	
DB2 Utilities	$346,565	Utilities S&S	$49,931
WebSphere Process Server	$108,130	Process Server S&S	$27,060
		Portal Enable S&S	$14,160
		DB2 MLCx12	$107,088
WebSphere Portal Enable	$70,800	z/OS MLCx12	$52,296
		QMF MLCx12	$47,724
TOTAL	$525,495	TOTAL	$298,259

Distributed Incremental Hardware

OTC		ANNUAL	
2 HP Integrity Superdome 9140n Server	$1,311,354	Server Maintenance (Prepaid in year 1 for 3 years)	$194,235
HP storage (1.67TBx2)	$749,805	Storage Maintenance	$44,400
TOTAL	$2,061,159	TOTAL	$627,106 (year 1) $44,400 (year 2,3)

Distributed Incremental Software

OTC		ANNUAL	
Oracle EE & Utilities	$492,000	Oracle S&S	$108,240
Oracle BPEL Process Server	$960,000	Oracle BPEL Process Server S&S	$211,200
Weblogic Portal	$960,000	Weblogic Portal S&S	$211,200
Unix	$113,760	Unix S&S (prepaid in year 1 for 3 years)	$42,752
TOTAL	$2,525,760	TOTAL	$658,896 (year 1) $530,640 (year 2, 3)

**** Mainframe Processor Maintenance includes the maintenance for general purpose processors and specialty engines***